

## AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [32] with the following amended paragraph.

Controller 50 also performs conventional leak estimation and respiratory cycle monitoring techniques. The present invention contemplates using any conventional technique for calculating leak  $Q_{\text{leak}}$ , which is the leakage of gas from the pressure support system and includes intentional leaks from the exhaust vent and unintentional leaks from the mask-patient interface, for example. The present invention also contemplates using any conventional technique for taking leak into consideration when determining the patient flow  $Q_{\text{patient}}$ , which is the flow of gas at the airway of the patient, and total flow  $Q_{\text{total}}$ , which is the flow of gas typically measured by flow sensor 46. For example, U.S. Patent Nos. 5,148,802 to Sanders et al., 5,313,937 to Zdrojkowski et al., 5,433,193 to Sanders et al., 5,632,269 to Zdrojkowski et al., 5,803,065 to Zdrojkowski et al., and 6,029,664 to Zdrojkowski et al., 6,360,741 to Truschel, 6,920,875 to Frank et al., and 6,626,175 to Jafari et al. and ~~pending U.S. patent applications 09/436,858 to Truschel, 09/586,054 to Frank et al., and 09/970,383 to Jafari et al.,~~ the contents of each of which are incorporated by reference into the present invention, all teach techniques for detecting and estimating leak and managing the delivery of breathing gas to the patient in the presence of leaks.

Please replace paragraph [33] with the following amended paragraph.

The present invention also contemplates using any conventional technique for detecting the inspiratory and expiratory phases of the patient's respiratory cycle. For example, U.S. Patent Nos. 5,148,802 to Sanders et al., 5,313,937 to Zdrojkowski et al., 5,433,193 to Sanders et al., 5,632,269 to Zdrojkowski et al., 5,803,065 to Zdrojkowski et al., and 6,029,664 to Zdrojkowski et al., and 6,626,175 to Jafari et al. ~~pending U.S. patent application no. 09/970,383 to Jafari et al.,~~ all teach techniques for differentiating between the inspiratory and expiratory phases of a respiratory cycle.